

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>				1. Contract ID Code Cost-Plus-Fixed-Fee		Page 1 Of 12	
2. Amendment/Modification No.  P00004		3. Effective Date  2003APR18		4. Requisition/Purchase Req No.  SEE SCHEDULE		5. Project No. (If applicable)	
6. Issued By TACOM AMSTA-AQ-ABGB JOSEPH H. SMITH (586)574-6987 WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: SMITHJH@TACOM.ARMY.MIL		Code W56HZV		7. Administered By (If other than Item 6) DCMA DAYTON AREA C, BUILDING 30 1725 VAN PATTON AVENUE WRIGHT PATTERSON AFB, OH 45433-5302		Code S3605A	
				SCD C PAS NONE ADP PT SC1012			
8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)  HAECO PARTNERS, LTD. 13460 STATE ROUTE 124 P.O. BOX 460 HILLSBORO, OHIO 45133-0460  TYPE BUSINESS: Other Small Business Performing in U.S.				<input type="checkbox"/>		9A. Amendment Of Solicitation No.	
				<input type="checkbox"/>		9B. Dated (See Item 11)	
				<input checked="" type="checkbox"/>		10A. Modification Of Contract/Order No.  DAAE07-00-C-L051	
				<input type="checkbox"/>		10B. Dated (See Item 13)  2000SEP28	
Code 1X349		Facility Code					
<b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. <b>FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.</b> If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. Accounting And Appropriation Data (If required) ACRN: AB NET INCREASE: \$1,051,000.00							
<b>13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS</b>							
KIND MOD CODE: G It Modifies The Contract/Order No. As Described In Item 14.							
<input type="checkbox"/>		A. This Change Order is Issued Pursuant To: The Contract/Order No. In Item 10A.				The Changes Set Forth In Item 14 Are Made In	
<input type="checkbox"/>		B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).					
<input checked="" type="checkbox"/>		C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of: Mutual Agreement of the Parties					
<input type="checkbox"/>		D. Other (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return _____ copies to the Issuing Office.							
14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
SEE SECOND PAGE FOR DESCRIPTION							
Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. Name And Title Of Signer (Type or print)				16A. Name And Title Of Contracting Officer (Type or print) WYMAN E. YOUNG II YOUNGE@TACOM.ARMY.MIL (586)574-8093			
15B. Contractor/Offeror  _____ (Signature of person authorized to sign)		15C. Date Signed		16B. United States Of America  By _____ /SIGNED/ (Signature of Contracting Officer)		16C. Date Signed  2003APR18	
NSN 7540-01-152-8070 PREVIOUS EDITIONS UNUSABLE				30-105-02		STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243	

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 2 of 12
	PIIN/SIIN DAAE07-00-C-L051	MOD/AMD P00004	
Name of Offeror or Contractor: HAECO PARTNERS, LTD.			

SECTION A - SUPPLEMENTAL INFORMATION

CONTRACT FOR:

Combination Gas Turbine/Diesel Engine Technology Development

Purpose of This Modification:

To Add Work Effort to the Contract for Extended Development and Test with Equitable Adjustment in Accordance with the Changes Clause and to Provide Cost Overrun Funding IAW the Limitation of Funding Clause and to Extend the Period of Performance of the Contract under the Contract.

Prior Contract Value:

\$5,309,875.00

Amount This Action:

\$1,051,000.00

Total Contract Value:

\$6,360,875.00

Prior Amount Obligated:

\$5,309,875.00

Amount Obligated this Action:

\$1,051,000.00

Total Amount Obligated:

\$6,360,875.00

A. This Modification P00004, a Supplemental Agreement, incorporates the following into the contract:

1. The Government and Contractor agree to equitably adjust the contract for the Scope of Work change, (shown in paragraph A.2, below), in the amounts as follows:

Estimated Cost:

\$595,602.00

Fixed Fee:

\$ 47,648.00

Total Amount:

\$637,250.00

2. The contract Scope of Work change is as follows and added to Section C:

"C.7.5 Improvement of the Fluid Coupler: The contractor shall improve on the design of the fluid coupler and make it capable of transmitting turbine power to the piston engine crankshaft at stall, (starting torque). The turbine power shall be able to start the piston engine through the fluid coupler. The fluid coupler shall include a device that allows fluctuation of torque-speed between the turbine shaft and the piston engine shaft. The contractor shall apply this fluid coupler effort to both prototype engines."

3. The additional amount of \$407,750.00 is provided to the contract, as cost overrun funding, to continue development and test of the two (2) prototype engines as originally contracted.

4. The equitable adjustment amounts for the change to the contract and the cost overrun funding amount are combined and added to the contract value amounts in Section B, CLIN 0001, as follows:

PRIOR AMOUNTS

+ EQUITABLE ADJUSTMENT

= FINAL AMOUNTS

Est. Cost:

\$4,962,500

+

\$1,003,352

=

\$5,965,852

Fixed Fee:

\$ 347,375

+

\$ 47,648

=

\$ 395,023

Total Cost:

\$5,309,875

+

\$1,051,000

=

\$6,360,875

5. The following is added to CLIN 0001 Section B of the contract: "The Funding Provided under CLIN 0002 Along with the Funding under CLIN 0001 are for the Payment for Work Effort under CLIN 0001."

6. The Period of Performance completion date of the contract is extended by fifteen (15) months from 31 Mar 2003 to 30 Jun 2004, for the additional contract effort.

7. The Contractor agrees to provide new data deliverables to the Government in accordance with Exhibit A, Data Items A004 for the Progress Reports and A005 for the Final Technical Report and Section F, for the Extended Development and Test of the two (2) prototype engines. Section F is revised to add Paragraphs F.3 and F.3.1 and F.3.2, data deliver instructions, for Data Items A004 and A005. See Section F, attached, for these new paragraph additions. The new Exhibit A, Data Items A004 and A005, are attached to this Modification.

B. The Government and Contractor agree to make the following additional changes in the contract resulting from the change to the Scope of Work and extension to the period of performance by fifteen (15) months:

1. In Section C, Scope of Work, the following changes are made:

<p style="text-align: center;"><b>CONTINUATION SHEET</b></p>	<p style="text-align: center;"><b>Reference No. of Document Being Continued</b></p> <p> <b>PIIN/SIIN</b> DAAE07-00-C-L051      <b>MOD/AMD</b> P00004 </p>	<p><b>Page</b> 3 <b>of</b> 12</p>
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**Name of Offeror or Contractor:** HAECO PARTNERS, LTD.

- a. In paragraph C.6.10, extend the date for delivery of the prototype engines to the Government from "24" to "45" months.
  - b. In paragraph C.7.1, in the first sentence, "remove the period (.)" and add the phrase, "for the Basic effort." Then add the new sentence: "The contractor shall deliver the "Draft and Final Technical Report", IAW Exhibit A, Data item No. A005, for the Extended Developmnt and Test effort."
  - c. In paragraph C.7.2, in the first sentence, "remove the period (.)" and add the phrase, "for the Basic effort." Then add the new sentence: "The contractor shall deliver the "Contractor Progress, Status and Management Report" IAW Exhibit A, Data Item No. A004, for the Extended Development and Test effort."
2. In Section F, Paragraph F.2, Duration of Performance (as shown in the attached copy of Section F.):
- a. Change Paragraph F.2.1 to read: "The contractor shall complete all work required under this contract by 30 Jun 2004."
  - b. Change Paragraph F.2. to correct a typographical error. The date shown is changed from "28 Feb 2002" to "28 Feb 2003."
  - c. Change F.2.4 by changing the completion date for the entire contractual effort from "31 Mar 2003" to "30 Jun 2004."
3. CLIN 0002 is added to the Section B, Continuation Sheet, to provide funding for the CLIN 0001 of the contract.
4. CLIN 0003 and ELIN A005 are added to Section B, Continuation Sheet, to account for the Data and Final Tecnnical Report, respectively, to be deliver the Government by the contractor.
- E. In consideration of this Modification P00004 agreed to as complete equitable adjustment, the Contractor releases the Government from any and all liability under this contract for any future equitable adjustments, attributable to such facts or circumstances giving rise to this Modification P00004. As a result of this Modification P00004 the total contract value and the total obligated amount of the contract are increased by \$1,051,000 from \$5,309,875 to \$6,360,875. Except as provided herein, all terms and conditions of Contract DAAE07-00-C-L051 remain unchanged and in full force and effect.

\*\*\* END OF NARRATIVE A 004 \*\*\*

Name of Offeror or Contractor: HAECO PARTNERS, LTD.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	<div>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</div> <div>SERVICES LINE ITEM</div> <div>NOUN: HAECO, INC. "GIESEL" ENGINES SECURITY CLASS: Unclassified</div> <div>CLIN CONTRACT TYPE: Cost-Plus-Fixed-Fee PRON: E102C192EH PRON AMD: 02 ACRN: AA AMS CD: 63300550211DD</div> <div>The contractor shall furnish all of the supplies and services to accomplish the task specified in section C "Scope of Work".</div> <div>** The Funding Provided Under CLIN 0002 Along ** With the Funding Under CLIN 0001 are for the ** Payment for Effort Under CLIN 0001.</div> <div>* Changed by Mod P00004 ** Added by Mod P00004</div> <div>(End of narrative C001)</div> <div>Inspection and Acceptance INSPECTION: Destination ACCEPTANCE: Destination</div> <div>Deliveries or Performance DLVR SCH PERFORM COMPLETION DATE REL CD QUANTITY DATE 001 0 30-JUN-2004</div> <div>\$ 5,309,875.00</div>				\$ 5,309,875.00
0002	<div>EXT ENG DEV AND TEST FUNDING FOR CLIN 0001</div> <div>SECURITY CLASS: Unclassified</div> <div>PRON: E132C315EH PRON AMD: 01 ACRN: AB AMS CD: 63300550211</div> <div>THIS CLIN 0002 IS ESTABLISHED, ONLY, TO PROVIDE FUNDING FOR CLIN 0001</div> <div>The Funding Provided under CLIN 0002, along with the Funding under CLIN 0001 are</div>				\$ 1,051,000.00

Name of Offeror or Contractor: HAECO PARTNERS, LTD.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	<p>to be Applied for Payment, for the Effort Described under CLIN 0001.</p> <p>(End of narrative B001)</p> <p><u>Inspection and Acceptance</u> INSPECTION: DestinationACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u> DLVR SCHPERF COMPL <u>REL CD</u><u>QUANTITY</u><u>DATE</u> 0010SEE SECTION F</p> <p>\$1,051,000.00</p>				
0003	<p><u>SERVICES LINE ITEM</u></p> <p>SECURITY CLASS: Unclassified</p> <p>Technical Data as Set Fort in the Contract Data Requirements List (DD Form 1423) hereinafter referred to as Exhibit A</p> <p>(End of narrative B001)</p>			Not Separately Priced	
A005	<p><u>FINAL TECHNICAL REPORT</u></p> <p>SECURITY CLASS: Unclassified</p> <p><u>Packaging and Marking</u></p> <p><u>Inspection and Acceptance</u> INSPECTION: DestinationACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u> DOC SUPPL <u>REL CD</u><u>MILSTRIP</u><u>ADDR</u><u>SIG CD</u><u>MARK FOR</u><u>TP CD</u> 0013 <u>DEL REL CD</u><u>QUANTITY</u><u>DEL DATE</u> 0011SEE EXHIBIT A</p> <p>FOB POINT: Destination</p> <p>SHIP TO: <u>PARCEL POST ADDRESS</u></p>	1	EA	\$** NSP **	\$** NSP **

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	(Y00003) SEE NARRATIVE ON DD 1423				

<b>CONTINUATION SHEET</b>	<b>Reference No. of Document Being Continued</b> <b>PIIN/SIIN</b> DAAE07-00-C-L051 <b>MOD/AMD</b> P00004	<b>Page</b> 7 <b>of</b> 12
<b>Name of Offeror or Contractor:</b> HAECO PARTNERS, LTD.		

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 The Contractor, as an independent contractor and not as an agent of the Government, shall design, fabricate and do limited tests on the unique aspects of the original Giesel concept developed under contract DAAE07-95-C-X093.

C.1.1 The Contractor shall fabricate a simple, single scotch yoke test engine to be used in limited testing of several design improvements. These improvements include a poppet exhaust valve, loop or cross flow scavenging configurations, valve in piston design, and exhaust valve guidance and actuation systems.

C.1.2 The Contractor shall conduct limited testing to investigate the effectiveness of the impingement cooling concept on this simple test engine. The purpose of this testing is to validate the impingement cooling design to increase the engine output power by 5% to 8%.

C.2 The Contractor shall test the Giesel gas turbine combined with a 6V53T engine to gain a better understanding of engine scavenging when combining a steady flow gas turbine in parallel with a 2-stroke, uniflow scavenged piston unit.

C.2.1 The Contractor shall make initial test runs with an instrumented engine to establish baseline data for the 6V53T engine. The initial test run is to operate the engine from idle, up to rated engine speed and power.

C.2.2 The Contractor, upon completion of the baseline, shall remove the existing roots blower and turbocharger and install the repaired Haeco gas turbine and gearbox on the 6V53T engine. The engine shall be compounded in the same manner as the Giesel-2 engine.

C.2.3 The Contractor shall operate the 6V53T engine together with Haeco gas turbine from idle up to rated power at 100% and 50% fuel, and at various speeds, each to determine engine performance and scavenging differences from the baseline runs.

C.2.4 The Contractor shall modify the 6V53T engine to incorporate impingement cooling components and single throttle control. The Contractor shall conduct measurements to validate the design of single throttle control for total engine, and the effective power increase from the impingement cooling.

C.3 The Contractor shall conduct concept/design studies of an inward opposed piston engine concept with an objective of 700 HP, including integrating the current Haeco turbine design for turbocharging.

C.3.1 The Contractor shall conduct integration studies to minimize size and to provide for desirable/useful package size. The useful power size shall meet the following power density parameters: 1.25 hp/lb, 20hp/ft<sup>3</sup>, 0.34lb/bhp-hr, 24bars of BMEP, 1.75 hp/engine displacement, 18 btu/hp-min, and 4.5bars max. turbocharger pressure ratio.

C.3.2 The following physical engine characteristics shall be established through the concept/design effort: physical size and weight, bore/stroke, component designs and weights, porting configurations, and accessory layouts. The design characteristics will be in accordance with established parameters of paragraph C.3.1. In addition, the stroke/bore ratio for the two stroke cycle engine would be in the range of 1.02 to 1.10.

C.3.3 The Contractor shall perform a comprehensive, quasi-dimensional numerical analysis using a modified thermodynamic based systems simulation to model the various gas-exchange, combustion, heat transfer and frictional processes occurring throughout an inwardly opposed engine cycle. The Contractor shall include ideal peripheral components to model inlet boost and exhaust conditions to include recovery via turbocharging and turbocompounding.

C.3.4 The simulation shall be used to determine the feasibility of the proposed gas cycle to meet power objective and to predict fuel economy. In conjunction with this simulation, the Contractor shall evaluate the influence of port timing and injection timing. The Contractor shall evaluate prototype engine designs with optimization of fuel economy, heat rejection, power/volume and power/weight as principle design considerations.

C.4 The Contractor shall obtain an independent technical review of the previous Giesel engine work. All pertinent technical, historical data shall be provided from which an analysis will be made to evaluate and interpret data. The Contractor shall provide program analysis results to the Government.

C.4.1 The independent source shall review the cycle analyses done by Haeco, investigating assumptions and methodology used to predict performance and fuel economy of the Giesel. A cycle simulation code shall be used in this comparative analysis.

C.4.2 A comprehensive analysis of the Giesel components shall be conducted. Components to be evaluated include the cylinder kit, including cylinder liner, cylinder head, piston, rings and valving. Critical component temperatures and loading will be evaluated to determine limits and suitability of designs.

C.4.3 An independent source shall assist Haeco by recommending measurements to be taken, tests to be run, and procedures to be followed for reducing and analyzing data for Haeco 6V53T experiments described in paragraph C.2 above.

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C.4.4 RESERVED

C.4.4.1 The Contractor shall develop or modify a cycle simulation model to represent a complete engine, including turbomachinery and other technologies as appropriate from the Giesel program. This model shall be used to determine the main dimensions and operational characteristics (bore/stroke, compression ratio, port timing, boost level, fueling rates and timing) of the engine.

C.4.4.2 The Contractor shall use the information from C.4.4.1 to form a basis for a conceptual 3-D design layout of the engine. Conceptual design shall include all of the major engine components to include: engine block, crankshaft, gear train, connecting rods, pistons, manifolds, fuel injection, turbomachinery, sumps, pumps and other ancillary components.

C.4.4.3 The components shall be modeled at a stage sufficient to estimate overall package weight and volume, components weights and mechanical dynamic loading. Dynamic loads shall then be used to verify major dimensions for bearings, crankshaft web, connecting rods, piston pins, and other components.

C.5 The Contractor shall perform a design study to define the best overall technical turbomachinery approach for the 2-stroke engines to be studied. The option of using a compact two stage compressor with radial inflow power turbine shall be one of the options examined. In addition, a high temperature material evaluation of turbomachinery components shall be made as part of the study.

C.6 The Contractor shall build two (2) prototype engines: the first, of the opposed piston type configuration, and the second, from the 6V53TA-DDEC engine.

C.6.1 The Contractor shall design, fabricate and test the first prototype engine of the opposed piston design with an objective of 700 hp rating.

C.6.2 To achieve the engine high power density parameters as outlined in paragraph C.3.1, the Contractor shall incorporate into the opposed piston prototype the latest in technology of high temperature components, materials and parameters to include the following:

- a. Light weight engine materials
- b. High temperature coatings and tribology
- c. High and low pressure turbines
- d. High pressure, electronically controlled, fuel injection system
- e. Compressed induction air cooling.

C.6.3 The Contractor shall build a second prototype engine from the 6V53TA-DDEC engine. The Contractor shall remove the standard turbocharger and the root blower from the 6V53TA-DDEC engine and install the Haeco turbine assembly. The Contractor shall apply coating materials to the liner and rings of the 6V53-Giesel engine that withstand the high temperature operation of the engine.

C.6.4 The Contractor, through an independent source, shall support the laboratory testing of both prototype engines with two (2) electronic Rapid Prototype Engine Control Systems (RPECS). The Contractor shall use one (1) RPECS on the 6V53-Giesel engine. The Contractor shall use the second RPECS on the opposed piston Giesel engine.

C.6.5 The Contractor shall install the two (2) engine prototypes, on a test bed with a dynamometer for performance testing. The Contractor shall obtain performance data from the tests to generate power, torque, and fuel consumption versus speed curves. The Contractor shall obtain data from the tests to generate a fuel map. The Contractor shall obtain motoring data from the tests for friction analysis. The Contractor shall provide the testing data to the Government in accordance with Exhibit A, Data Item A002, Contractor's Progress Report and Exhibit A, Data Item No. A001, Final Technical Report.

C.6.6 The Contractor shall execute performance development and mechanical integrity tests on the two (2) prototype engines. Based upon these results, the Contractor shall accomplish iterative engineering for component redesign and fabrication. The Contractor shall insert these components into the engine and optimize their performance. The Contractor shall generate and report the test data, as in paragraph C.6.5.

C.6.7 The Contractor shall fabricate spare part components for test support of the two (2) prototype engines.

C.6.8 The Contractor shall deliver both prototype engines, as defined in paragraphs C.6.1 and C.6.2 for the Opposed Piston Engine and paragraph 6.3 for the 6V53-Giesel engine, to the Government, for further tests and evaluations.

C.6.9 The Contractor shall conduct a final limited endurance test on each prototype engine. This test shall be 25 hours for each engine at speeds and loads agreed upon in a test plan to be approved by the Contracting Officer's Representative (COR). (See Exhibit A, Contract Data Requirement List (CDRL), DD Form 1423, Data Item No. A003.)

C.6.10 The Contractor shall complete the entire contractual effort, including the delivery of the two (2) prototype engines to TACOM for further testing, within \*\* 45 months from the contract award date.

C.7 Reports:

<b>CONTINUATION SHEET</b>	<b>Reference No. of Document Being Continued</b>  <b>PIIN/SIIN</b> DAAE07-00-C-L051 <b>MOD/AMD</b> P00004	<b>Page</b> 9 <b>of</b> 12
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C.7.1      Scientific and Technical Report.    The Contractor shall deliver a draft and final "Scientific and Technical Report" in accordance with (IAW) Exhibit A, CDRL (DD Form 1423), Data Item No. A001 \*\*for the Basic effort. \*The contractor shall deliver a "Draft and Final Technical Report" IAW Exhibit A, Data Item No. A005, for the Extended Development and Test effort.

C.7.2      Contractor's Progress, Status, and Management Report.    The Contractor shall deliver a "Contractor's Progress, Status, and Management Report" bi-monthly, IAW Exhibit A, CDRL (DD Form 1423), Data Item No. A002, \*\*for the Basic effort. \* The contractor shall deliver the "Contractors Progress, Status and Management Report" IAW Exhibit A, Data Item No. A004, for the Extended Development and Test effort.

C.7.3      Test Plan.    The Contractor shall deliver a "Test Plan" IAW Exhibit A, CDRL (DD Form 1423), Data Item No. A003.

C.7.4      Electronic Data Delivery.    All data and information delivered under this contract shall be submitted electronically, in the Contractor's format, and in plain English. The file format and delivery method will be dependent upon the file type and size. The files shall be MS Windows95/MS Office 97 Professional software compatible. Available methods of delivery are as follows: electronic mail, file transfer protocol, 3.5 HD floppy disc, CD ROM, Iomega Zip or Jaz.

\* C.7.5      Improvement of Fluid Coupler:    The Contractor shall improve on the design of the fluid coupler and make it capable of transmitting turbine power to the piston engine crankshaft at stall, (starting torque). The turbine shall be able to start the piston engine through the fluid coupler. The fluid coupler shall include a device that allows fluctuation of torque-speed between the turbine shaft and the piston engine shaft. The contractor shall apply this fluid coupler effort to both prototype engines.

\*Added by Mod P00004  
\* \*Changed by Mod P00004

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SECTION F - DELIVERIES OR PERFORMANCE

- F.1 DELIVERABLES
- F.1.1 HARDWARE
- All hardware deliverables under this contract shall be shipped FOB Destination to the following address:

Commander

U.S. Army Tank-automotive and Armaments Command

ATTN: AMSTA-TR-R, Milad Mekari, MS 121

Warren, MI 48397-5000
- F.1.2 The contractor shall ship the completed "Giesel" engines within the timeframe specified in paragraph F.2.1 below.
- F.1.3 DATA: All data items required hereunder shall be delivered FOB destination in accordance with the Contract Data Requirements List (DD Form 1423) to the following address:
- Commander

U.S. Army Tank-automotive and Armaments Command

ATTN: AMSTA-TR-R, Milad Mekari, MS 121

Warren, MI 48397-5000
- F.2 DURATION OF PERFORMANCE
- F.2.1 The contractor shall complete all work required under this contract by 30 Jun 2004. \*
- F.2.2 The contractor shall deliver a Draft Technical Report for the Basic Effort by 28 Feb 2003. \*\*\*
- F.2.3.1 The Government shall review and return to the contractor the draft technical report within twenty-one (21) days from delivery date established in F.2.2.
- F.2.3.2 The contractor shall deliver the final technical report within ten (10) days after the draft report approval by the Government.
- F.2.4 The contractor shall complete the entire contractual effort, including delivery of any hardware as specified in Paragraph F.1, by 30 Jun 2004. \*
- F.3 \*\* Contractor's Progress, Status and Management Report and The Final Report Submittals for the Extended Engines Development and Testing Effort as follows:
- F.3.1 \*\* The Contractor shall shall deliver three (3) Contractor's Progress, Status and Management Reports for the Extended Developmental and Testing effort to the Government, in accordance with Exhibit A, Data Item No. A004, and as follows:
- \*\* a. The first Progress Report submittal is due the Government by July 31, 2003.

\*\* b. The second Progress Report submittal is due the Government by 30 November 2003.

\*\* c. The third Progress Report submittal is due the Government by 28 Feb 2004.
- F.3.2 \*\* The contractor shall deliver the Final Technical Report for the Extended Development and Testing effort to the Government in accordance with Exhibit A, Data Item No. A005, and as follows:
- \*\* a. The contractor shall deliver a Draft Technical Report to the Government COTR by 31 May 2004.

\*\* b. The Government shall review and return to the contractor the Draft Technical Report within twenty-one (21) days from delivery date established in F.3.2.a.

\*\* c. The contractor shall deliver the final technical report to the Government within ten (10) days after receipt of the Draft Report approval by the Government.

\* Changed by Mod P00004

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\*\* Added by Mod P00004  
\*\*\* Typographical Error Correction

\*\*\* END OF NARRATIVE F 001 \*\*\*

SECTION G - CONTRACT ADMINISTRATION DATA

LINE	PRON/	OBLG STAT/			INCREASE/DECREASE		CUMULATIVE
<u>ITEM</u>	<u>AMS CD</u>	<u>ACRN</u>	<u>JOB ORD NO</u>		<u>PRIOR AMOUNT</u>	<u>AMOUNT</u>	<u>AMOUNT</u>
0002	E132C315EH	AB	2	\$	0.00	\$	1,051,000.00
	63300550211		32C315				
NET CHANGE					\$	1,051,000.00	

SERVICE	NET CHANGE				ACCOUNTING	INCREASE/DECREASE
<u>NAME</u>	<u>BY ACRN</u>	<u>ACCOUNTING CLASSIFICATION</u>			<u>STATION</u>	<u>AMOUNT</u>
Army	AB	21 32040000036D7675P633005255Y S20113			W56HZV	\$ 1,051,000.00
NET CHANGE						\$ 1,051,000.00

		<u>PRIOR AMOUNT</u>		<u>INCREASE/DECREASE</u>		<u>CUMULATIVE</u>
		<u>OF AWARD</u>		<u>AMOUNT</u>		<u>OBLIG AMT</u>
NET CHANGE FOR AWARD:	\$	5,309,875.00	\$	1,051,000.00	\$	6,360,875.00